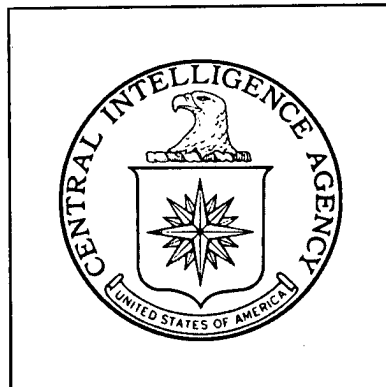


Top Secret



**DIRECTORATE OF
INTELLIGENCE**

**Industrial Facilities
(Non-Military)**

Basic Imagery Interpretation Report

Selected Copper Production Facilities

China



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DATE MAY 1969

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Directorate of Intelligence
Imagery Analysis Service

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INSTALLATION OR ACTIVITY NAME		COUNTRY
Selected Chinese Copper Production Facilities (See Table below)		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	
See Table	See Table	
MAP REFERENCE		
See References		
LATEST IMAGERY USED		NEGATION DATE (If required)
See References		Not Required

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<u>Installation</u>	<u>UTM Coordinates</u>	<u>Geographic Coordinates</u>	<u>WAC-PIC No.</u>
Chu-chou Nonferrous Metals Plant 601	49RGA050850	27-52-35N 103-04-41E	0498-17-F1
Kun-ming Copper Smelter and Refinery (Ta-pu-chi)	48RTC655772	25-05-53N 102-40-27E	0496-11-F2
Pai-yin Copper Smelter and Refinery Plant	48SVR290450	36-32-53N 104-11-52E	0383-58
Shen-hung-ching Copper Smelter	50RLJ050400	30-10-45N 114-55-42E	None
Shen-yang Nonferrous Metals Plant	51TWG302283	41-48-37N 123-21-58E	0290-55-Y2

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ABSTRACT

The five copper production facilities studied in this report were all completed prior to October 1966. Since then there have been no apparent changes to the facilities at Shen-hung-ching and Shen-yang, and only minor construction activity at Chu-chou, Kun-ming, and Pai-yin.

The plants at Kun-ming, Pai-yin, Shen-hung-ching, and Shen-yang appeared to be in production on photography between October 1966 and January 1969, but the copper production facilities at Chu-chou have never been observed in operation.

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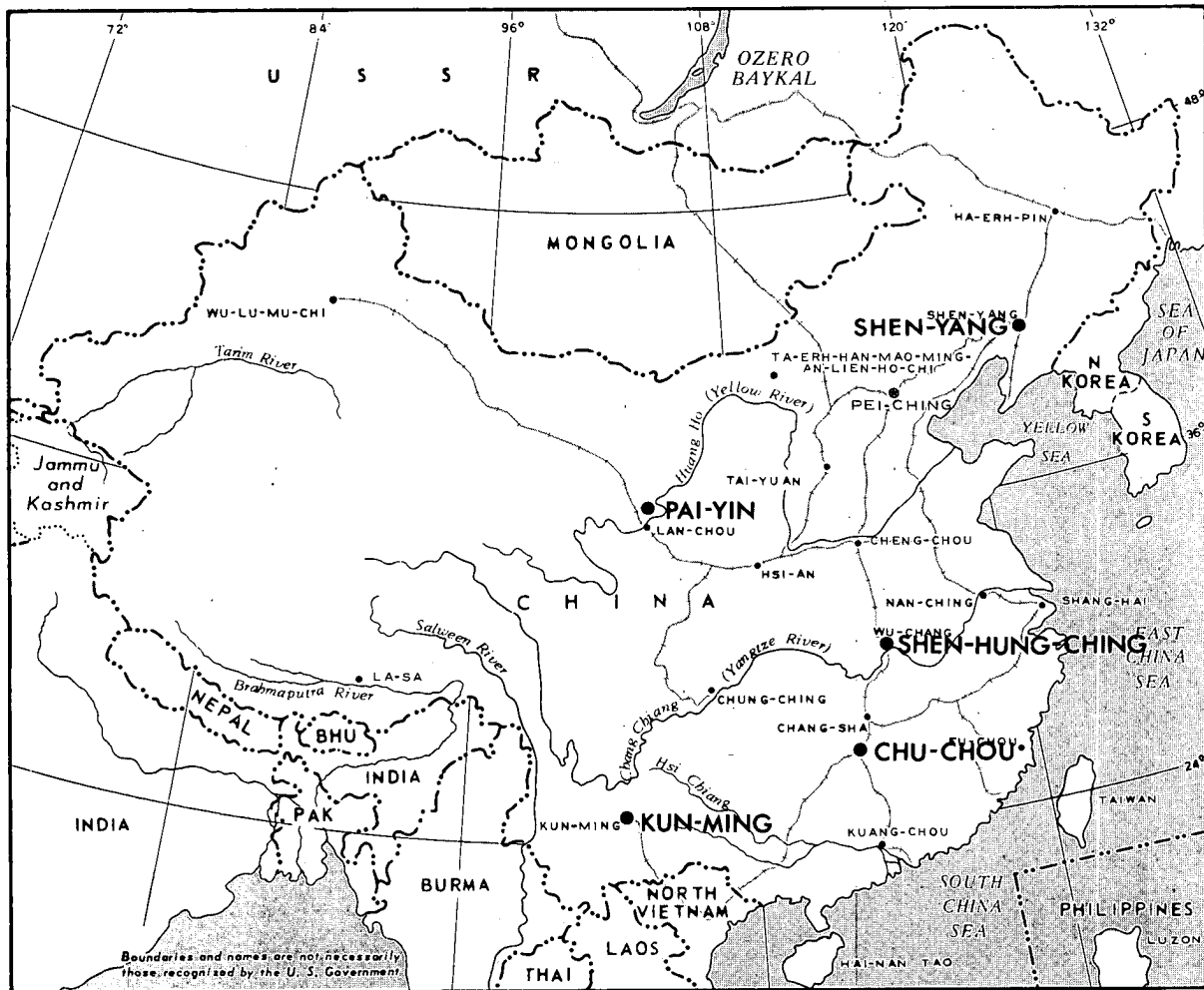


FIGURE 1. LOCATION MAP

INTRODUCTION

This report identifies all major structures and provides dimensions for the main production facilities at the Kun-ming, Pai-yin, and Shen-hung-ching copper plants and in the copper production areas of the nonferrous metals plants at Chu-chou and Shen-yang. Also included are summaries of new construction and production activity at the facilities since they were last studied in detail on late 1966-early 1967 photography. 1/

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CHU-CHOU NONFERROUS METALS PLANT 601
(COPPER SMELTER AND REFINERY)

BASIC DESCRIPTION

Chu-chou Nonferrous Metals Plant 601 is located adjacent to the Chu-chou Chemical Fertilizer Plant, about 5 nautical miles (nm) northwest of Chu-chou. The copper production facilities at Plant 601 consist of a smelter, a refinery, and various support facilities. They are located in an area measuring about 1,200 by 1,050 feet in the eastern section of the plant. The area is both road and rail served.

The only construction activity observed within the area between [redacted] was the construction of a 270-foot addition to the southern end of the fabrication building (Item 9) prior to [redacted]. The smelter has never been seen in operation.

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Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (ft)</u>
1	Ore Storage Building	370 x 80
2	Electrostatic Precipitator	250 x 95
3	Smelting Section	70 x 60
4	Roasting Section	Irregular
5	Ore Storage Building	280 x 105
6	Casting Section	250 x 40
7	Converter Section	90 x 50
8	Electrolytic Cell Building	175 x 135
9	Fabrication Building	620 x 85
10	By-products Recovery Building	180 x 55

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KUN-MING COPPER SMELTER AND REFINERY (TA-PU-CHI)

BASIC DESCRIPTION

The Kun-ming Copper Smelter and Refinery is located about 5 nm north-northwest of Kun-ming, China. The plant is secured by a fence and occupies an irregular shaped area measuring about 3,400 by 2,500 feet. It is served by both road and rail.

Between [] the construction of two additional buildings was completed within the facility. The liberator building (Item 3) appeared complete on photography of [] and the ore preparation unit (Item 10) was complete on coverage of []

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The smelter appeared to be in operation on January, May, and June 1967 photography as evidenced by smoke emanating from the stacks serving the smelting and converter sections. The operational status of the facilities could not be determined on the small-scale photography of January 1968, and the plant did not appear to be operating on April 1968 coverage.

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (ft)</u>
1	Support Area	
2	Electrolytic Cell Building	310 x 280
3	Liberator Building	150 x 70
4	Casting Section	635 x 125
5	Converter Section	770 x 85
6	Steam Plant	
7	Smelting Section	270 x 80
8	Ore Storage Building	515 x 80
9	Administration Area	
10	Ore Preparation Unit	

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PAI-YIN COPPER SMELTER AND REFINERY PLANT

BASIC DESCRIPTION

The Pai-yin Copper Smelter and Refinery is located about 35 nm north-east of Lan-chou, China. The plant is secured by a fence, is irregular in shape, and measures 3,650 by 3,300 feet. It is served by a road and by numerous rail spurs. Copper ore is transported to the plant by rail from an open-pit mine located about 7 nm to the north.

Between [redacted] 14 small support buildings were constructed within the plant. Between [redacted] 1968, three storage tanks associated with one of the by-products recovery buildings were completed. There were no signs of construction activity when the plant was last observed on December 1968 photography.

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The smelter appeared to be in operation on January 1967 and August and December 1968 photography as evidenced by smoke emanating from the stacks servicing the smelting and converter sections. There were no signs of plant operation on February and March 1968 coverage.

Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (ft)</u>
1	By-Products Recovery Buildings (4)	
2	Roasting Section	125 x 80
3	Ore Blending Facility	
4	Smelting Section	200 x 105 155 x 60
5	Concentration Building	Irregular
6	Casting Section	355 x 120
7	Electrolytic Cell Building	400 x 195
8	Converter Section	425 x 85
9	Fabrication Building	425 x 135 200 x 80

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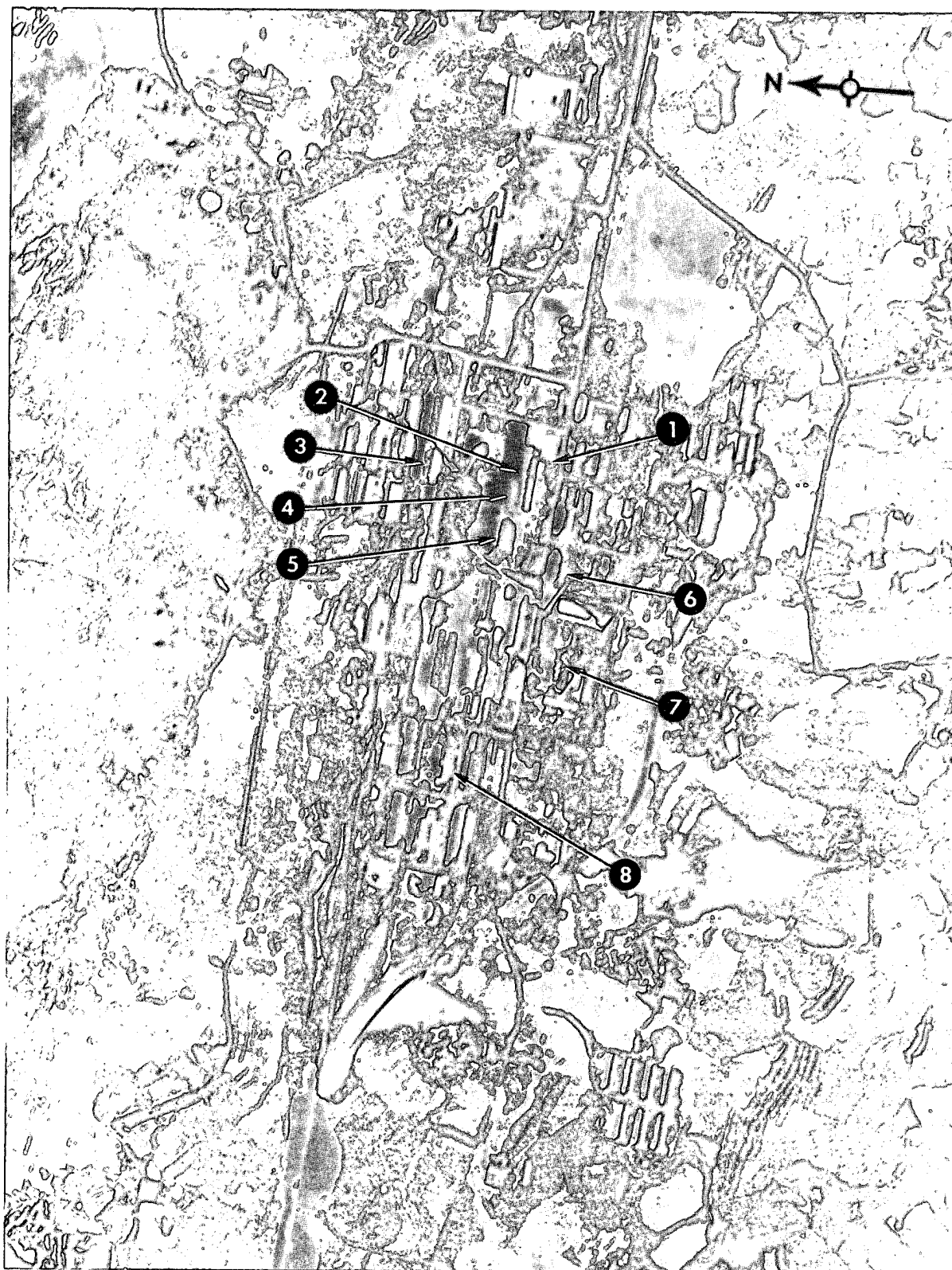


FIGURE 5. SHEN-HUNG-CHING COPPER SMELTER,

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SHEN-HUNG-CHING COPPER SMELTER

BASIC DESCRIPTION

The Shen-hung-ching Copper Smelter is located about 5.4 nm north-northwest of Ta-yeh, China. The plant covers an area measuring approximately 2,500 by 1,900 feet and is not secured. The smelter is served by a road from Ta-yeh and by a rail spur from an iron ore concentration plant in Shen-hung-ching, located about 3 nm northwest of the smelter.

Between [] and the latest coverage of this plant on [] there was no apparent new construction or changes in the existing facilities.

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The smelter appeared to be in operation on February and November 1967 and September 1968 photography as evidenced by smoke emanating from the stack serving the smelting section. Its operational status could not be determined on the poor-quality coverage of []

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Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (ft)</u>
1	Smelting Section	150 x 110
2	Converter Section	290 x 80
3	Ore Storage Building	400 x 75
4	Casting Section	135 x 55
5	Roasting Section	120 x 70
6	Bag House	140 x 40
7	Possible Sulfuric Acid Plant	
8	Steam Plant	

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SHEN-YANG NONFERROUS METALS PLANT

BASIC DESCRIPTION

The Shen-yang Nonferrous Metals Plant is located within the northwest section of Shen-yang, China. The plant is secured by a wall, with the facilities covering an area measuring approximately 2,850 by 1,450 feet. The facilities include: 2 copper smelters, 1 lead smelter, 2 electrolytic cell buildings, a steam plant, numerous by-product recovery buildings, and many support and storage buildings.

There was no new construction activity at this plant between [REDACTED]

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The two copper smelters appeared to be in operation on seven of the ten referenced missions as evidenced by smoke emanating from the stacks serving each smelter. Only the southern smelter (Item 4) appeared to be operating on [REDACTED] photography, and there were no signs of plant operation on [REDACTED] coverage.

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Key to Annotations

<u>Item</u>	<u>Description</u>	<u>Dimensions (ft)</u>
1	Administration Area	
2	By-Products Recovery Area	
3	Electrolytic Cell Building	550 x 135
4	Copper Smelter	Irregular
5	By-Products Recovery Complex	
6	Ore Storage Building	405 x 75
7	Copper Smelter	160 x 60
8	Electrolytic Cell Building	550 x 95
9	Lead Smelter	Irregular
10	Power Plant	
11	Fabrication Area	

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REFERENCES

Chu-chou Nonferrous Metals Plant 601 (Copper Smelter and Refinery)

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Map

ACIC. US Air Target Chart Series 200, Sheet M0498-IAL, 2nd edition,
Sep 60, Scale 1:200,000 (SECRET

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Kun-ming Copper Smelter and Refinery (Ta-pu-chi)

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Map

ACIC. US Air Target Chart Series 200, Sheet M0496-17HL, 3rd edition,
Jan 68, Scale 1:200,000 (SECRET

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Pai-yin Copper Smelter and Refinery Plant

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Map

ACIC. US Air Target Chart Series 200, Sheet M0383-22HL, 3rd edition,
Dec 68, Scale 1:200,000 (SECRET)

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Shen-hung-ching Copper Smelter

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Map

2nd RTS. US Air Target Series 200, Sheet M0493-11HL, 4th edition,
Jul 68, Scale 1:200,000 (SECRET)

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Shen-yang Nonferrous Metals Plant

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Map

US Air Target Chart Series 200, Sheet M0290-IIHL, 4th
edition, Jan 66, Scale 1:200,000 (SECRET)

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DOCUMENTS

1. CIA. IAR 85003, Selected Nonferrous Metals Plants, Communist China,
Jul 67, (TOP SECRET CHESS RUFF)

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Requirement

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